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Q1: (a) 1: polynomial 1 has a leading term of higher degree (n^3 as opposed to $7n^2$ of polynomial 2) so it grows faster and is eventually greater.

(b) 1: polynomial 1 has a leading term of higher degree (n^7 compared to n^6) thus it grows faster.

(c) 2: both have leading terms of the same degree but polynomial 2 has a greater coefficient thus as $n \to \infty$, it gets bigger than polynomial 1.

Q2: (a) $\log_2(n) = 8 \Rightarrow n = 2^8$

(b) $\log_5(n) = \log_5(2) + \log_5(5^{25}) = \log_5(2 \times 5^{25})$

$\Rightarrow n = 2 \times 5^{25}$

(c) $n = \log_4(32) = \log_{2^2}(2^5) = \frac{5}{2}\log_2(2) = \frac{5}{2}$

Q3: greetings = {"Howdy", "Hello", "Hey"}

the method change, changes the first element to "Howdy" but the rest of the array is not touched